

Physical &  
 Applied Sci.  
 Serials



*Forty-second Annual Report of the Savilian  
 Professor of Astronomy to the Visitors of  
 the University Observatory for 1916-17.*

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BOARD OF VISITORS, 1917.

THE VICE-CHANCELLOR (Thomas Banks Strong, D.D., Dean of Christ Church).

THE SENIOR PROCTOR (Rev. F. J. Lys, M.A., Fellow of Worcester).

THE JUNIOR PROCTOR (H. P. Allen, D.Mus., M.A., Fellow of New College).

THE ASTRONOMER ROYAL (Sir Frank W. Dyson, M.A., LL.D., F.R.S.).

THE DIRECTOR OF THE CAMBRIDGE OBSERVATORY (Professor A. S. Eddington, M.A., M.Sc., F.R.S.).

THE RADCLIFFE OBSERVER (A. A. Rambaut, M.A., D.Sc., F.R.S.).

SIR W. H. M. CHRISTIE, K.C.B., Hon. D.Sc., F.R.S.	} Until Nov. 10,
A. E. H. LOVE, D.Sc., Hon. Fellow of Queen's.	
E. B. ELLIOTT, M.A., F.R.S., Fellow of Magdalen.	} Until Nov. 25,
C. LEUDESORF, M.A., Fellow of Pembroke.	

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At the opening of the meeting on May 9 the following resolution was passed :—

The Visitors place on record their sorrow at the decease of Professor Esson, the last survivor of the original Board elected on November 10, 1875, and Secretary to the Visitors during the whole 42 years of the work of the Observatory.

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The report here presented refers to the period from April 26, 1916, to April 25, 1917, and exhibits the state of the Observatory on the last-named day. It is arranged in conformity with the report on the form of Reports presented on Oct. 25, 1913.

### I. Staff.

The Observatory has lost the services of Mr. John Mullis, who died on Nov. 18, 1916. He had been in the service of the University Observatory since its erection in 1874, and the whole place bears witness to his skill and devotion. He worked nearly to the end: for though his energies were inclined to slacken, medical opinion suggested that the best hope for him lay in activity. Thus he did not enjoy any years of pensioned retirement: but the University has expressed its recognition of his long services by granting a small pension to his widow.

Mr. F. A. Bellamy and his niece, Miss E. F. Bellamy, have continued their conscientious work entirely to my satisfaction during the year.

### II. Teaching.

The usual lectures and practical instruction were offered, but there was no response from students.

Several lectures to military bodies have been given by request: and some other lectures of a popular character.

From the 12th to 31st March the Director was in France lecturing in Y.M.C.A. huts and at officers' training stations. In April he gave also several lectures on Salisbury Plain to troops.

### III. Research and Publications.

Volume III of the Vatican Zones ( $+62^\circ$ ) is about half printed, but there have been considerable delays in sending proof from Rome owing to the War. The Standard Co-ordinates are now completely computed ( $+64^\circ$  to  $+55^\circ$ ). Plate constants have been determined for all the plates of which measures have been received (end of  $12^h + 58^\circ$ ).

Ledgers of the residuals for the reference stars have been formed, on the same plan as for the Oxford Zones, by Miss E. F. Bellamy, and entries are complete for zones  $+64^\circ$ ,  $+63^\circ$ ,  $+62^\circ$ ,  $+61^\circ$ ,  $+60^\circ$ ,  $+59^\circ$ , representing 560 plates out of a total of 1040. Miss Bellamy has critically examined the residuals as they were entered, thus detecting not only cases of individual error in measures, in computation, or in the Helsingfors Catalogue itself, but more general errors where

the plate constants were defective owing to various causes. She has now a valuable knowledge of work of this kind.

It is pleasant to be able to record that Mr. R. J. Pocock has completed zone  $-17^{\circ}$  at the Hyderabad Observatory, and communicated to the Royal Astronomical Society an interesting paper on the results in March last. His work is, of course, independent of ours; but there has been a little mutual help, and we hope especially that the réseau sent him will arrive safely and prove useful.

The counts of stars of different magnitudes for the various zones of the Astrographic Catalogue have been continued, and the "Spiral" mentioned in the last report has so far been confirmed. [Mr. Pocock's paper above mentioned was a valuable contribution.] There is at present a considerable amount of material in hand nearly ready for publication.

The analysis of weather statistics has been continued, chiefly by the examination of 28 rainfall records, for stations scattered over Europe, and for the half-century 1851-1905. Ample confirmation was forthcoming for the main propositions. The Royal Society have voted a small grant (from the Government Grant Fund) for the further prosecution of this work and a good deal of material has already been accumulated besides what has been communicated to the Royal Meteorological Society as below.

The following papers, by members of the Staff and others, have been published during the year. Miss Blagg has now nearly completed her work on Baxendell's *Variable Stars*. The main conclusions drawn from this work were adopted and extended by the Rev. T. E. R. Phillips in a notable Presidential Address to the British Astronomical Association on some points relating to the light-curves of long period Variable Stars (*Journ. Brit. Astron. Assoc.*, XXVII, p. 2, 1916, Oct.).

256. "Seismological Investigations — Twentieth Report (Manchester, 1915)." By H. H. Turner, *Brit. Assoc. Report*, 1915, p. 52.

257. "Obituary Notice of the late James Simms." By H. H. Turner, *Mon. Not.*, LXXVI, p. 268 (1916, Feb.).

258. "Obituary Notice of the late General G. Defforges." By H. H. Turner, *Mon. Not.*, LXXVI, p. 289 (1916, Feb.).

259. "Obituary Notice of the late James Francis Tennant" (1829-1915). By H. H. Turner, *Proc. Royal Soc.*, A. Vol. 92, p. x.

260. "The Discovery of Oxygen in the Stars." By H. H. Turner, *Trans. South-East Union of Scient. Soc.*, p. 46 (1916, May).

261. "Eleventh Note on the Number of Faint Stars with Large Proper Motions." By R. J. Pocock, *Mon. Not.*, LXXVI, p. 657 (1916, June).

262. "Baxendell's Observations of Variable Stars. Seventh Instalment: No. 17, R Sagittae; No. 18, R Serpentis; No. 19, T Serpentis." Edited by H. H. Turner and Mary A. Blagg. *Mon. Not.*, LXXVI, p. 659 (1916, June).

263. "Seismological Investigations — Twenty-first Report (Newcastle, 1916)." By H. H. Turner, *Brit. Assoc. Report.* (*In the press.*)

264. "The Stellar Magnitude Scales of the Astrographic Catalogue. Tenth Note: The Melbourne Magnitudes." By H. H. Turner. *Mon. Not.*, LXXVII, p. 35 (1916, Nov.).

265. "The Irregular Variable RS Camelopardalis." By H. H. Turner, *Mon. Not.*, LXXVII, p. 118 (1916, Dec.).

266. "Baxendell's Observations of Variable Stars. Eighth Instalment: No. 20, T Tauri; No. 21, R Ursæ Majoris; No. 22, S Ursæ Majoris." Edited by H. H. Turner and Mary A. Blagg, *Mon. Not.*, LXXVII, p. 125 (1916, Dec.).

267. "Discontinuities of Meteorological Phenomena. Third Note." By H. H. Turner, *Quart. Journ. Royal Met. Soc.*, XLIII, p. 43 (1917, Jan.).

268. "The Magnitudes of the Cordoba *Catalogo de las Zonas de Exploracion*,  $-52^{\circ}$  to  $-62^{\circ}$ ." By H. H. Turner, *Mon. Not.*, LXXVII, p. 220 (1917, Jan.).

269. Note on the possible attraction between photographic images. By H. H. Turner, *Mon. Not.*, LXXVII (1917, April).



270. "Systematic Errors in Photographic Distances of Double Stars." By F. A. Bellamy, *Mon. Not.*, LXXVII (1917, April).

#### IV. Buildings and Grounds.

By instruction from the University Chest two of the hot water coils were taken down and repaired in July-October. The leadwork on the roof was also repaired in November.

#### V. Equipment, Library, &c.

A micrometer has been lent to a computer at a distance who showed himself capable of making measures of special excellence. Experimental measures are being made of some plates in zone  $-22^{\circ}$  sent by the Director of the Santiago Observatory (Chile). Definite proposals are, however, reserved for a future report.

H. H. TURNER.

UNIVERSITY OBSERVATORY,

OXFORD,

*April 26, 1917.*

